

ABSTRACT OF THE DISCLOSURE

A system for separating particles from a contaminated liquid stream
5 includes an apparatus for mixing the liquid with one or more separation
enhancement additives and gases. A pressure reducing device having a flow
restrictor element within an enlarged tube receives the mixed liquid and
creates bubble laden floccs by reducing the pressure of the liquid stream.
The pressure reducing device empties into a bloom chamber of a flotation
10 tank, where the bubble laden floccs are directed upwardly to an upper portion
of the flotation tank. The flotation tank is configured such that the bubble
laden floccs circulate within the upper portion of the flotation tank until they
float to the upper surface, while decontaminated liquid flows to a lower
portion of the tank for removal. A skimmer removes the floated contaminated
15 floccs from the upper surface of the flotation tank into a dewatering
apparatus.